

PHYSICAL ASSET MANAGEMENT:

PAST,

PRESENT

AND

FUTURE

by Jeffery L. Campbell, Ph.D.

It hasn't been until the last 20 years that the practice of physical asset management has evolved into a professional discipline. Like facilities management, physical asset management is an unknown science and thus is not understood by management in general. Little research has been conducted in the field and it is not an area of training and education at schools and universities. Historically, physical assets have been managed by finance and accounting departments. The focus has been on financial accounting. The skill sets required for this new thinking typically fall outside the discipline of accounting and finance. Given the fact that facility costs typically rank second only to salaries and benefits in the United States (both public and private entities) there has been a significant increase in approaches to physical asset management.

The last 20 years has yielded some new perspectives that should be explored. There are four driving concepts that should be better understood.

1. Asset management should have a holistic, "cradle to grave" perspective. This life cycle approach is extremely important in managing resources. The industry has been

fixated on building first costs but little attention has been placed on the life cycle costs of new buildings. Research has shown that in a typical situation, for every \$1 that is spent on a new building, it will cost \$10 to operate and maintain that building over its life. Up until the early 1980s, the United States was locked into the mentality of the design-bid-build model. More recently there has been a move to the design-build model. To have a better holistic approach some in the industry are now adopting the design-build-maintain model.

2. An asset life cycle should not be confused with useful life. There are 1.2 computers for every knowledge worker in the United States. Most companies or organizations replace their computers every two to three years. Because of the changes in technology, the useful life of a computer is only two to three years, but the life cycle is much longer. Technology drives useful lives.
3. There needs to be a change in the perspective as to how buildings are managed. Buildings are not managed, but the systems that make up those buildings are managed. Roofing systems, mechanical systems, flooring systems, etc., are all systems that must be understood and managed.
4. Progress cannot be improved unless there is an agreed upon standard that can be measured.

Jeff Campbell is the chair for the Facilities Management Program at Brigham Young University, Provo, Utah. He can be reached at jcampbell@byu.edu.

There have only been a few promising practices identified that meet the preceding criteria. The U.S. General Accounting Office report “Military Infrastructure: Real Property Management Needs Improvement” (GAO/NSIAD-99-100, September 1999) identified Brigham Young University’s Capital Needs Analysis Center (CNA) and the University of California’s Lawrence Livermore National Laboratory as two entities that demonstrated the best practice of extending the life of physical assets. Their systems and methodology include a predetermined inspection process that provides accurate results. They use standardized, industry-accepted cost estimating systems, and an easy-to-use database that prioritizes current and anticipated maintenance and repair requirements. This system maximizes the use of resources.

Over the last 20 years, BYU has built a mature database model that provides “smart data” about the true length of asset lives and the key points at which assets should be inspected and retrofitted. This has not always been the case. In the early 1980s, the university had an unquenchable appetite for money to renew facilities. Over that time period, energy and regulatory costs were escalating. The needs and missions of the colleges were changing. Technology was also drastically reducing the life cycle of assets—therefore more money was needed more often.

Even though long-range planning was taking place, the plans had not necessarily been serious nor believable or followed. The leaders did not understand what was happening. This situation created a culture of confusion and lack of trust. It was at this time that the trustees of the university asked nine important questions.

1. What standard can the organization afford?
2. Can the facility team really separate capital funds from operating funds?
3. Can the facility team project facility costs for the next 40 years, and project an average cost per year?
4. How would the facility team manage if they were given limited capital funding?
5. Can the facility team provide a detailed list of all capital replacements over the next 40 years?
6. Can the facility team project space needs based on maximum utilization?
7. Can the facility team carefully prioritize a list of one-time projects for existing facilities?
8. Can the facility team establish a replacement standard?
9. Can the facility team design a computer program to track and maintain facility integrity and usefulness?

New Model

These questions led to a new vision of no longer being the manager or caretaker of facilities but being a true leader in total asset management. This shift redirected the focus from being money driven to true-needs driven. The new terminology and direction included:

Quality is defined as meeting all stakeholder expectations

Assets are defined as looking at the long-term capital investment as true life cycle cost.

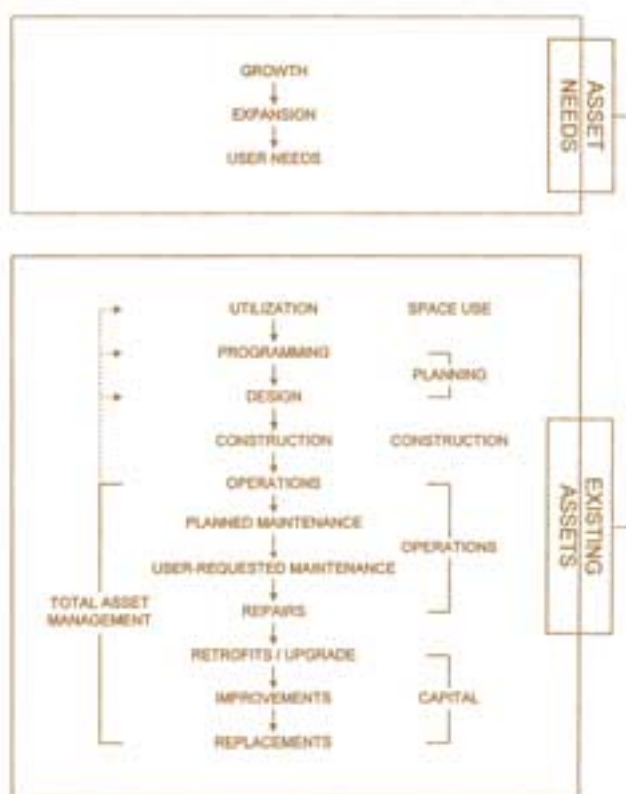
Management is defined as doing the thing right, by being efficient.

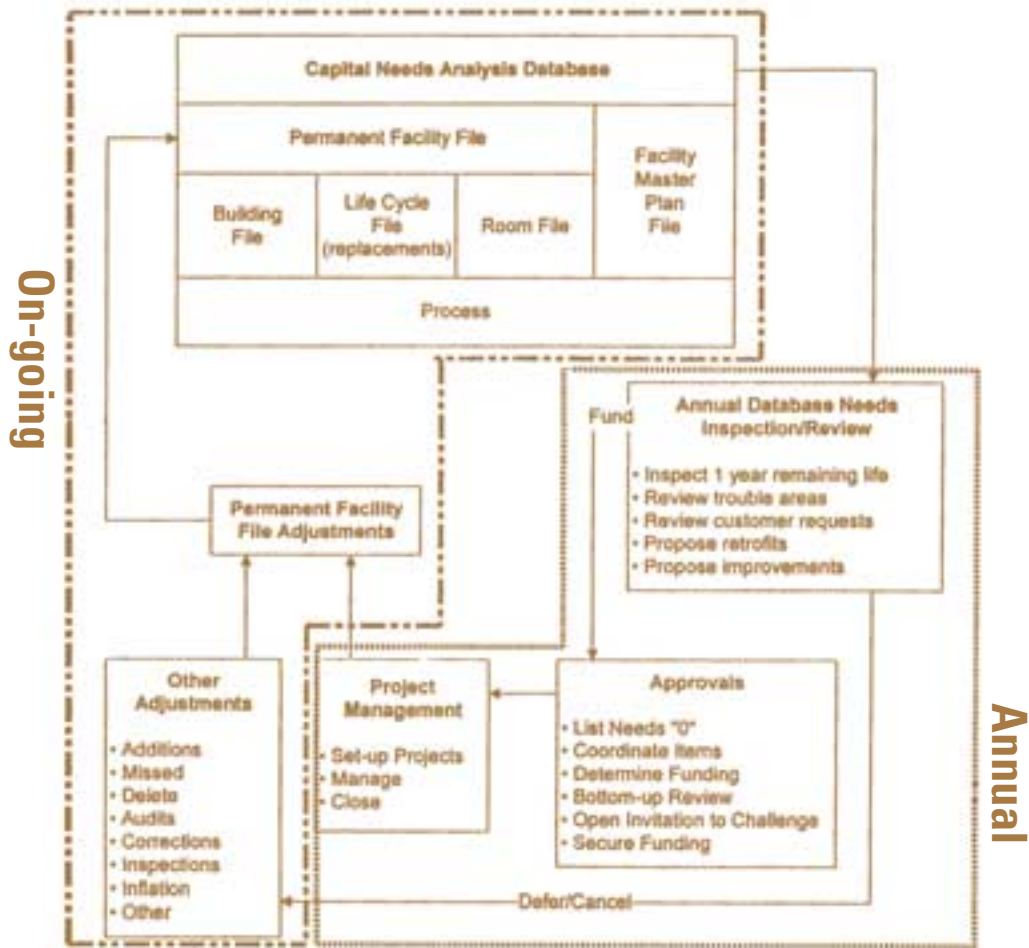
Leadership is defined as doing the right thing, by being effective.

This new vision and direction led to the creation of 15 driving principles and values. They are:

1. Focus on needs and not dollars.
2. Be proactive not reactive. Work on important and not always urgent activities.
3. The best method to determine needs is from the bottom-up.
4. Use a database to inventory all assets, meaning all buildings, all systems, and all rooms.
5. Goal: Maximize the useful life of every asset. Focus on prevention.
6. Retrofit rather than replace when economical to extend useful life.
7. Fund only proven needs not political requests.
8. Use the “Law of Witnesses” to determine the replacement standard. The person who maintains the asset determines the replacement. It must have a signoff from higher management.

Total Asset Management





9. True move to life cycle costing.
10. Use common sense.
11. Apply methods consistently.
12. Be a learning company. Learn from the information and the maturing database.
13. Continuously improve the process.
14. Maintain communication by a high level of accuracy, visibility, and unity. Build trust and integrity with the stakeholder partnership.
15. Maintenance of existing assets must have a higher priority than new or additional assets.

This vision also led to a new understanding and definition of operating and capital budgets. Total asset management includes the proper organization and function of operating and capital budgets. Operating budgets include operations, maintenance, and repairs and must promise that assets are managed properly. This makes certain that users are satisfied, assets function, and that the environment is stable. Capital budgets ensure the assets' useful life. Replacements, retrofits,

improvements, and new space additions must maximize and extend useful life.

Total Asset Management Processes

There are three categories in the organization and processes of total asset management. The replacement group focuses on the life cycle. This group ensures the quality of building interiors, exteriors, utilities, major equipment, general site, distribution systems, and information technology.

The retrofit group handles one-time projects such as utility systems, room-type renewal, building renewals, and exterior and general site renewals.

The improvements group also manages one-time projects such as mandatory or compliance items, general site and utility expansion, space improvements, information technology, additions and new space, and asbestos and seismic projects.

Two other smaller groups handle unscheduled or emergency replacements and other special funded projects.

There are two main responsibilities of the Capital Needs Analysis Center. First is the ongoing process of learning by tracking real needs, ensuring that all assets are included in the inventory and updating any changes to the assets. Second, beyond standard maintenance and repair, an annual inspection is made of all assets that have one year of remaining life to determine whether life can be extended or if indeed it must be replaced. Also a review is done of customer requests and trouble areas along with a review of one-time projects for priority need. The asset management database is divided into four categories.

- The building file tracks all buildings and facilities.
- The life cycle file tracks the life cycle for all assets.
- The room file tracks all assets within a space.
- The facility master plan file tracks all one-time projects such as retrofits and improvements.

A partnership with key stakeholders provides an annual funding limit, a 40-year cash flow average of all life cycle database items, and a five-year average of all facility master planned items. The funding limit is reviewed annually for changes.

A so-called bank is established from which funds are placed and then distributed. Annual inspections and reviews are done to determine needs. If needs do not exceed the limit difference, it goes into the bank. If needs exceed the annual limit/funds then it comes out of the bank. Existing limits, changes in needs, and bank balance should be reviewed annually.

After 20 years of operations this asset management system information has been able to meet and answer the nine questions that were originally proposed. The system now provides seven key areas of information:

- A closed system of information.
- A way to monitor asset changes.
- A variety of cash flow projections.
- A current costs inventory.
- A way to measure reliable increases as information is used.
- A method of assigning funding responsibilities.
- A tool for determining quality.

The results have significantly reduced costs in long-term life cycle building costs when benchmarked with similar campuses while maintaining a high level of facility readiness and mission focus.

The business world seems to have found a way to micro-manage almost every element of an enterprise except facilities. Physical asset management is going to be an important tool in the future to bridge the gap between finance and facilities. Facility capital budget numbers will carry credibility as facilities professionals lead the way in this new discipline. 🏢

No More **UGLY** Tile & Grout!



"I opened the rest room door... and literally stopped in my tracks. It was so pure and clean, I was blown away!"

Bobbie Abbott, customer
of Highways Properties, Orlando, Florida

"The SaniGLAZE restoration system is phenomenal!"

It's a can't miss system. Customer response has been fantastic!"

Dan Hopkins, dealer
of Blue Chip 2000, Cincinnati, Ohio







Before SaniGLAZE After SaniGLAZE



- Eliminates odors
- Shields against germs & mildew
- Easy to keep "sparkling clean"
- Stays "like new" for years

The Miracle Process™

SaniGLAZE

TILE & GROUT RESTORATION

1-800-874-5554





www.saniglaze.com

Get the full story about our revolutionary technology!